MOOCS reshape the university landscape

It's been just over two years since two leading Stanford University professors, inspired by Salman Khan's short math videos for children on YouTube, opened up participation in their hugely expensive artificial intelligence undergraduate course to anyone who was interested, via a Cloud platform. Around 120,000 students signed up from 175 countries around the world, ranging from school pupils to pensioners. That dramatic success has unleashed dozens of new MOOCs (Massive Open Online Courses) from the world's top universities and led to the creation of several competing platform providers, which have provided what used to be elite courses to more than seven million online students for free.

The speed of developments has produced lots of hype over the past couple of years, with much breathless talk of an educational revolution and free access to university education for the world's poor. More recently, it has also created a backlash among university faculty, in the U.S. especially, who argue that online learning cannot replace teaching and who worry about losing their jobs while policy-makers and university administrators look to cut the rising costs of education.

The reality is that education is undergoing the same challenge from virtualization as the media or retail sector. "You can think of a stable and rather ossified landscape that is now walking on quicksand," says Daphne Koller, CEO of Coursera, the largest for-profit MOOC platform. "It's not a pedagogical revolution, but a change of the educational system," says Pierre Dillenbourg, responsible for digital education at one of Europe's most active MOOC-producing universities, EPFL in Lausanne. "MOOCs are reshaping the university landscape and the relations between universities; the actors are being redefined."

Online and distance learning is not, of course, new and many universities have tried over the past decade to extend their reach with online lectures. Indeed, the term MOOC itself was coined in 2008, by Canadian professor George Siemens, to describe a new form of collaborative learning, using the Web to create a network of people who generate knowledge and solve major global problems together.
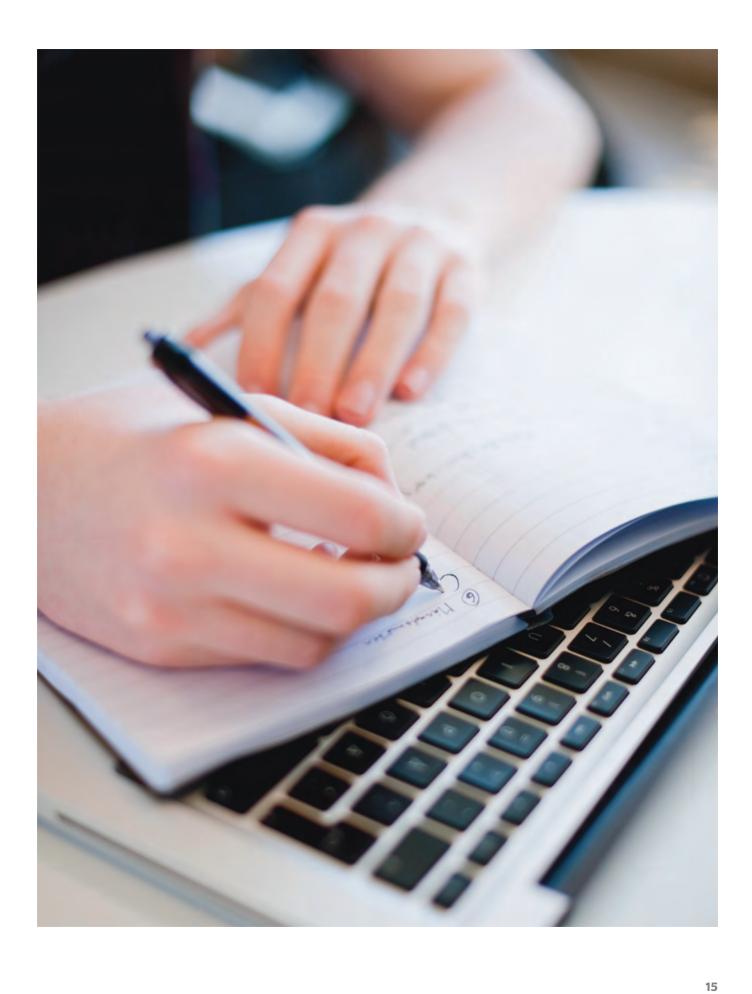
So why did none of these attempts lead to the proliferation of courses, platforms and rethinking that is now taking place around the world? The reason, according to Christian Terwiesch, a professor at The Wharton School who has been teaching his own MOOC and analyzing its progress, is that they "failed to re-imagine the need." New players, such as Coursera, EdX and Udacity, redefined the demand for learning and repackaged how people could best do it online. They realized "that the unit of analysis is not a 90-minute lecture, but short, focused talks and quizzes; that it's not a class but a community of learners, experiencing learning largely at their own pace but together."

Within this new format, the teaching has remained traditional. "An educator tries to ensure the student can duplicate his knowledge," as Dr. Siemens puts it: "They are not trying to foster creativity." But MOOCs have already brought two significant changes to education.

The first is an improvement in the quality of on-campus education thanks to what is being called the "flipped classroom," where students watch the lecture videos first, then spend the time in class discussing the content. ▶

▼ Compared to parallel traditional classes, "we see better pass rates and better concentration in our initial pilots," says Anant Agarwal, president of EdX. "They're going at their own pace, with instant feedback and peer interaction online, and then having their questions answered in class."

But blended learning also brings with it significant challenges. "MOOCs are traditional, but flipping is the real pedagogical revolution," says EPFL's Mr. Dillenbourg. "What do you do with the students if they've already watched the lectures? How should teachers orchestrate the face-to-face activity?" This gets to the core of the disruptive challenge to universities, which need to think about what they can do that cannot be replicated digitally.

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The challenge to faculty is even greater if MOOCs, especially those from other universities, are seen as a way of cutting spiralling costs. But that is what is exciting to administrators. "The potential exists to have new learning platforms that can drive down costs, improve learning outcomes and provide a broader reach of educational opportunities," says William Kirwan, chancellor of the University System of Maryland, but he also argues that there must be "incentives for faculty to experiment and consider alternative ways to deliver education."

The second big change is the dramatic increase in the reach of education. MOOCs have created what Ms. Koller calls "a new consumer for education," those that are currently left out of the market because they are deemed too old, too young, too poor or just unable to fit into a university schedule. It is also bringing a new wave of globalization into education — and not just by opening the doors to individuals world-wide. For developing countries with insufficient educational capacity, MOOCs offer a tool to leapfrog. "India wants to increase post-secondary completion to 30% from 13%," says Ms. Koller. "They would have to build 1,500 new academic institutions — one a week for 30 years. How would you staff them?"

The Chinese education ministry is already actively using EdX, an open-source platform created as a joint venture between Harvard and MIT, to provide its own MOOCs in Mandarin, while licensing and subtitling existing EdX courses for Chinese students. Local online teaching assistants, who provide exams and respond to questions on discussion forums, help these.

The Queen Rania Foundation for Education and Development, already active in innovative school reform in Jordan, is in the process of creating a MOOC platform for the Arab world, also using EdX. Known as Edraak, the platform is due to launch in 2014 with a combination of translated courses, backed by Arabic-speaking professors and teaching assistants, and courses commissioned from Arabic-speaking professors in leading universities around the world. In addition, the platform will feature high-profile Arab professionals speaking about their work — people like architect Zaha Hadid and film-maker Nadine Labaki — helping to create inspiring role models, especially for girls. It will also create courses in English providing new perspectives on the Arab world and is looking at ways to use the platform for early child-development and corporate training. "We felt this was an opportunity that the Arab world could pick up on — or be left behind again," says Haifa Dia Al-Attia, who runs the Foundation. "MOOCs offer an alternative where higher education cannot absorb the number of people who are interested or where, for whatever reason, they have no access, and that alternative adds a fresh way of thinking."